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**(54) Title (EN):** APPARATUS FOR ANALYSING CAUSAL RELATIONSHIPS BETWEEN LIFELOG DATA, AND METHOD THEREFOR

**(54) Title (FR):** APPAREIL POUR ANALYSER DES RELATIONS CAUSALES ENTRE DES DONNÉES DE JOURNAL DE VIE, ET PROCÉDÉ ASSOCIÉ

**(54) Title (KO):** 라이프로그 데이터 간 인과 관계 분석 장치 및 그 방법

**(57) Abstract:**

**(EN):** The present invention pertains to an apparatus for analysing causal relationships between lifelog data, and a method therefor. According to the present invention, the causal relationship analysis method using an apparatus for analysing causal relationships between lifelog data comprises the steps of: receiving an input of lifelog data including biometric signal information, GPS signal information and voice signal information; selecting two or more variables among lifelog data variables, generating variable combinations and path models with respect to the variable combinations, and calculating causal information between variables for the respective variable combinations using the lifelog data and the path model; determining using a preset threshold value whether the calculated causal information between variables has statistical significance; and outputting, onto a screen, the causal information between variables that is determined to have statistical significance. In this way, according to the present invention, causal relationships between various pieces of lifelog data are analysed and provided, and thereby correlations between humans and the environment can easily be determined. In addition, the influence of humans on the environment or the influence of the environment on humans can accurately be analysed, and thereby useful information used for various business improvements such as environmental improvements and human resource developments can be provided.

**(FR):** La présente invention concerne un appareil pour analyser des relations causales entre des données de journal de vie et un procédé associé. Selon la présente invention, le procédé d'analyse de relation causale qui utilise un appareil pour analyser des relations causales entre des données de journal de vie comprend les étapes suivantes : recevoir une entrée de données de

journal de vie contenant des informations de signal biométriques, des informations de signal GPS et des informations de signal vocal ; sélectionner au moins deux variables parmi des variables de données de journal de vie, génération de combinaisons de variables et de modèles de chemin en rapport avec les combinaisons de variables, et calculer des informations causales entre les variables pour les combinaisons de variables respectives en utilisant les données de journal de vie et le modèle de chemin ; le fait de déterminer, à l'aide d'une valeur de seuil prédéfinie, si les informations causales calculées entre les variables présentent une signification statistique ; et délivrer en sortie, sur un écran, des informations causales entre les variables qui ont été déterminées comme ayant une signification statistique. De cette façon, selon la présente invention, des relations causales entre divers éléments de données de journal de vie sont analysées et fournies, et des corrélations entre des êtres humains et l'environnement peuvent ainsi être facilement déterminées. De plus, l'influence des êtres humains sur l'environnement ou l'influence de l'environnement sur les êtres humains peut être analysée avec précision, et des informations utiles peuvent ainsi être utilisées pour diverses améliorations d'activités telles que des améliorations environnementales et des développements de ressources humaines.

**(KO):** 본 발명은 라이프로그 데이터 간 인과 관계 분석 장치 및 그 방법에 관한 것이다. 본 발명에 따르면, 라이프로그 데이터 간 인과 관계 분석 장치를 이용한 인과 관계 분석 방법에 있어서, 인과 관계 분석 방법은 생체 신호 정보, GPS 신호 정보 및 음성 신호 정보를 포함하는 라이프로그 데이터를 입력받는 단계, 상기 라이프로그 데이터의 변수 중 두 개 이상의 변수를 선택하여 변수 조합 및 상기 변수 조합에 대한 경로 모델(path model)을 생성하고, 상기 라이프로그 데이터 및 상기 경로 모델을 이용하여 상기 변수 조합 각각에 대한 변수간 인과 정보를 산출하는 단계, 기 설정된 임계값을 이용하여 상기 산출된 변수간 인과 정보가 통계적 유의성을 가지는지 여부를 판단하는 단계, 그리고 상기 통계적 유의성을 가진다고 판단된 변수간 인과 정보를 화면상에 출력하는 단계를 포함한다. 이와 같이 본 발명에 따르면, 다양한 라이프로그 데이터 간 인과 관계를 분석하여 제공하므로 사람과 환경 사이의 상관 관계를 용이하게 판단할 수 있다. 또한 사람이 환경에 미치는 영향력이나 환경이 사람에게 미치는 영향력을 정확히 분석할 수 있으므로, 환경 개선이나 인력 개발과 같은 다양한 업무 개선에 이용되는 유용한 정보를 제공할 수 있다.

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